SLX-111
transmitter & receiver pair

smartlynx

user guide

also available:
SLX-100, SLX-214

Table of Contents

Introducing SmartLynx Cat5 AV Extender

What's in the box?

Thank you for buying the Smart-e SmartLynx Cat5 AV Extender. Depending on the configuration of your system various quantities of the parts below may be included in your shipment.

If any of the accessories listed below are missing please contact the Smart-e dealer you purchased products from or contact Smart-e customer support at:

+44 (0) 1306 628264

If you ordered a SmartLynx Set:

Item	Description	SLX-111
Transmitter Unit	One Input and one Cat5 Output	Yes
Receiver Unit	One Cat5 Input and one Output	Yes
Power Supply	24Volt 20Watt earthed PSU	Yes
Mains Cable	Fig8 Mains Lead	Yes

Introducing SmartLynx Cat5 AV Extender

What is SmartLynx?

The SmartLynx is a combination of transmitter and receiver devices designed to transmit high resolution computer video and/or audio signal over Cat5 wire. AV stands for Audio Visual and includes such signal formats as Broadcast Video (TV video signal), Computer Video (VGA, SVGA, SXGA and etc. signals) and various formats of Audio signals.

Why is SmartLynx necessary?

Sometimes AV signals need to be transmitted over distances greater than commonly specified product limitations of 5m. In this case several choices are available, but most are expensive and bulky, which is in some cases simply not practical, due to space limitations in the conduits.

The SmartLynx allows the transmission of AV signals over a standard Cat5 UTP cable over distances of up to 300m. The actual distance is a function of the signal resolution and cable quality. The following is a rough guide to distance and resolution:

Cat5 Cable Length	Maximum Recommended Resolution
100m	VGA to UXGA (1600x1200)
100m	HDTV (720p,1080i)
300m	SDTV

How does SmartLynx work?

The Smart-e SmartLynx is a transmitter and receiver pair designed to extend video, stereo audio and IR/RS232 signals over (UTP) unshielded twisted pair category 5 (Cat5) cabling. They are supplied with a UK power supply and consist of: a transmitter with a video input (connectors vary by model), an audio input and a Cat5 output and; a receiver with a cat5 input and corresponding outputs. Certain models are also supplied with local outputs and/or IR or RS232 connections.

The extended signals depends on the model but supported signals are UXGA, CVBS, YUV (YPbPr), Y/C, RGsB and RGBS analogue format and Stereo Audio. The basic concept behind this product is the ability to encode and decode analogue signal combined with precise line equalization and compensation.

Installation and Operation

1. Preparing for installation

Start installation process by ensuring that all video displays and audio devices are compatible with the computers being used.
This is accomplished by connecting the devices directly to the computer and checking that the devices operate as desired without the SmartLynx system.
Potential System Set-ups:
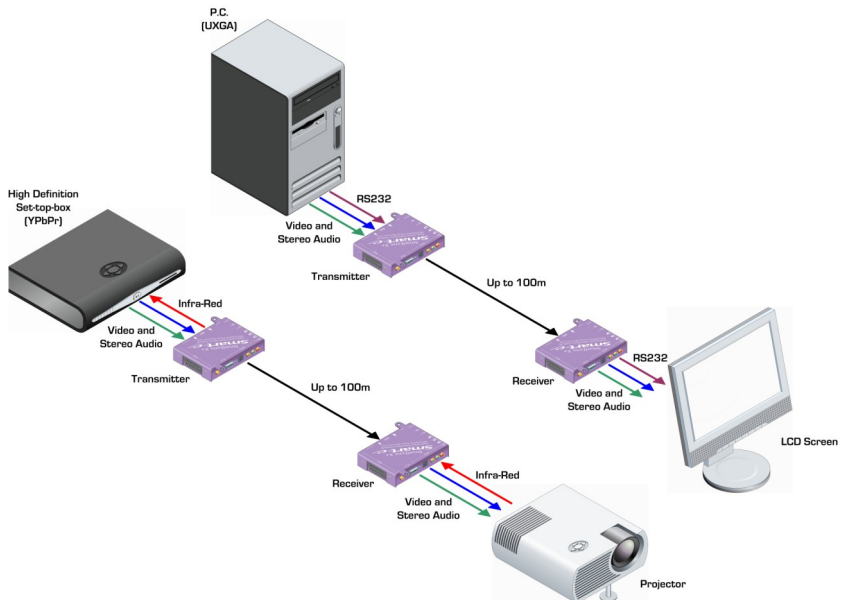
Install CAT-5 wiring between desired locations. In order to minimize system operation difficulties, avoid routing the system cables near fluorescent lights, air conditioners, or machines that may create electrical noise.

Installation and Operation

2. Connect Transmitter to the video signal source

2.1 Connect the video output of the source device to the appropriate input of the transmitter using the relevant cable.

2.2 Although there are multiple connector types, only one feed of video may be routed by the product at any one time, the multitude of connectors are to simplify installations.

-4-
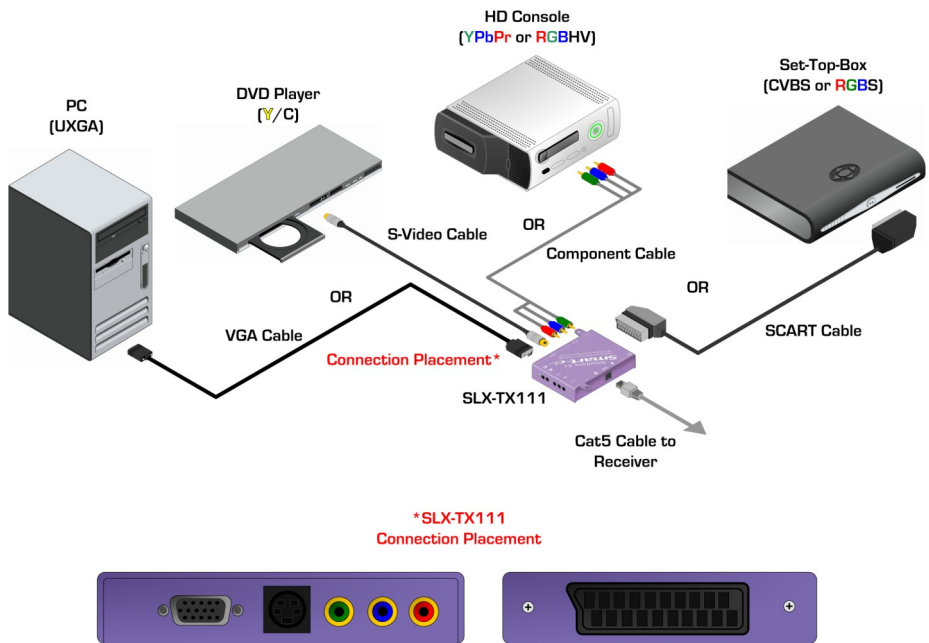
Installation and Operation

3. Connecting Audio, Infra-red and RS232 to the transmitter

3.1   Connect the audio output of the source device to the 'audio in' mini
jack connectors on the SLX-TX111, using an interface cable if appropriate.

3.2   If using RS232 connect control cable to the minijack input as shown
in the diagram below. Using a CAB-J19F-1M

3.3   If using Infra-Red connect the SM-LED and SM-EYE to the relevant
minijack connectors shown in the diagram below.

Cat5 to Receiver

RS232
SM-LED (IR Emitter)
SM-EYE (IR Receiver)
Audio 1
Audio 2

SM-LED
(IR Emitter)
Audio 1

Audio 2
SM-EYE
(IR Receiver)
RS232
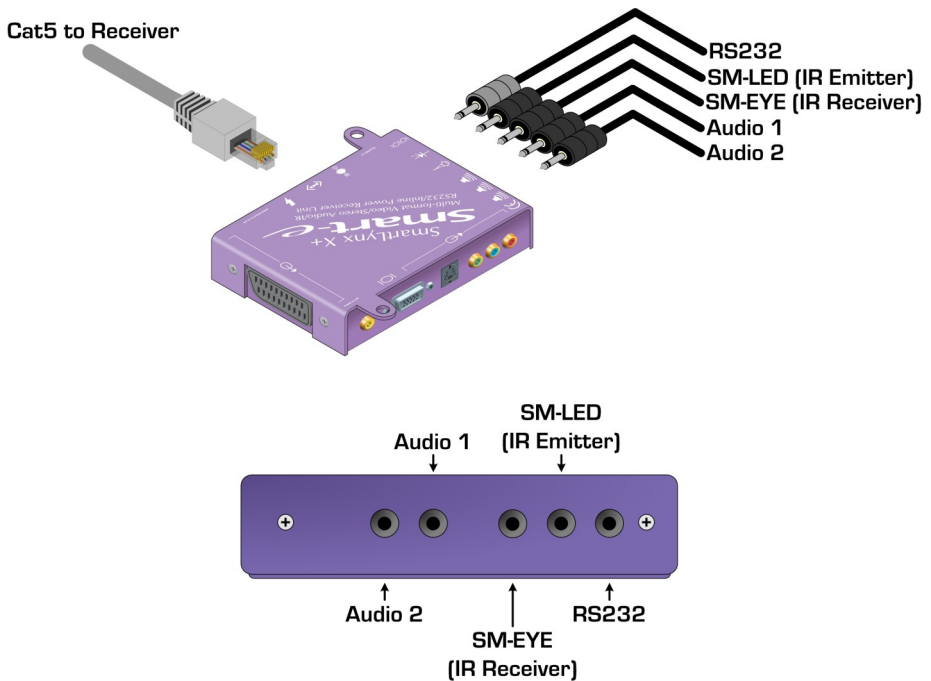
Installation and Operation

4. Setting the jumpers for required video format

4.1   The diagram below illustrates how the jumpers must be set for each required video format.

4.2   For RGBS ensure the first jumper is set to RGBS and the second to RGBS.

4.3   For VGA ensure the first jumper is set to VGA and the second to VGA.

4.4   For composite video [CVBS/scart] ensure that the first jumper is set to VGA and the second to CVBS.

4.5   For composite video [using phono] ensure that the second jumper is set to VGA
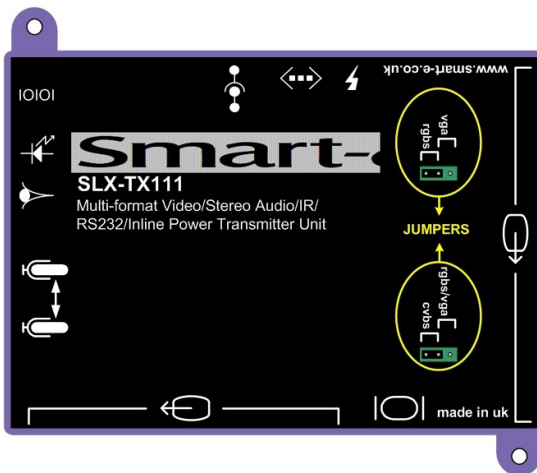
Jumper Positions for RGBS

Jumper Positions for VGA/Composite Phono

Jumper Positions for Composite Scart

This Side irrelevant For composite

Smart-e [UK] Ltd ● Hale House Barns ● Oakwoodhill ● Ockley ● Surrey ● RH5 5NA

T +44 [0] 1306 628264   **F** +44 [0] 1306 628074   **E** info@smart-e.co.uk   **W** www.smart-e.co.uk

Installation and Operation

5. System Power up

5.1   Turn the system on by plugging in the power adapter to the SmartLynx Transmitter (or Receiver if preferred)

5.2   Power up your computer.

5.3   Observe both transmitter and receiver power LED are ON, and source device is switched on.

6. Preparing and connecting System CAT-5 cable

The SmartLynx utilizes category 5 (CAT 5), unshielded twisted pair (UTP) cable to transport signal between transmitter and receiver.

CAT 5 cable is more desirable than coaxial cable due to its low cost and ease of installation. This cable is used for LAN applications and is found in abundance, already installed, in many buildings . The category 5 is a standard which establishes minimum requirements for telecommunications cabling within a commercial building. The standard covers various aspects of wiring including telecommunications outlets.

Following is the wiring standard for terminating CAT 5 cable using RJ 45 connector:

Pair 1   Pins 1 & 2
Pair 2   Pins 3 & 6
Pair 3   Pins 4 & 5
Pair 4   Pins 7 & 8
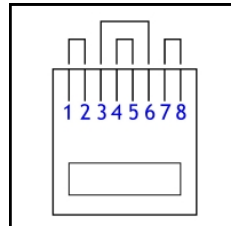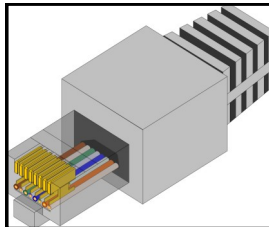
Connectors: RJ-45
Capacitance: 14 pf/ft (46.2 pf/m)
Conductor Gauge: 24 AWG
Impedance: 100 +/- 15 ohms
                       4 - Pair

7. Connecting SLX-RX111 to the display device

7.1   Making sure that the Cat 5 cable is connected to the transmitter output, connect the cable to the RJ45 socket on the receiver unit.

7.2   If the cable connection is correct the power LED on the front of the receiver should illuminate (power is sent up the Cat 5 cable).

7.3   Connect the display to relevant connector on the receiver (see diagram below) using the appropriate cable.

7.4   If RS232 control is required then connect to the display via the 3.5mm minijack on the receiver using a CAB-J19-1M.

Cat5 from Transmitter/ Matrix

PSU connection is not required – unit is powered from the Cat5 cable

Component (YPbPr)

S-Video (Y/C)

UXGA (RGBHV)

Scart (RGBS or Composite)
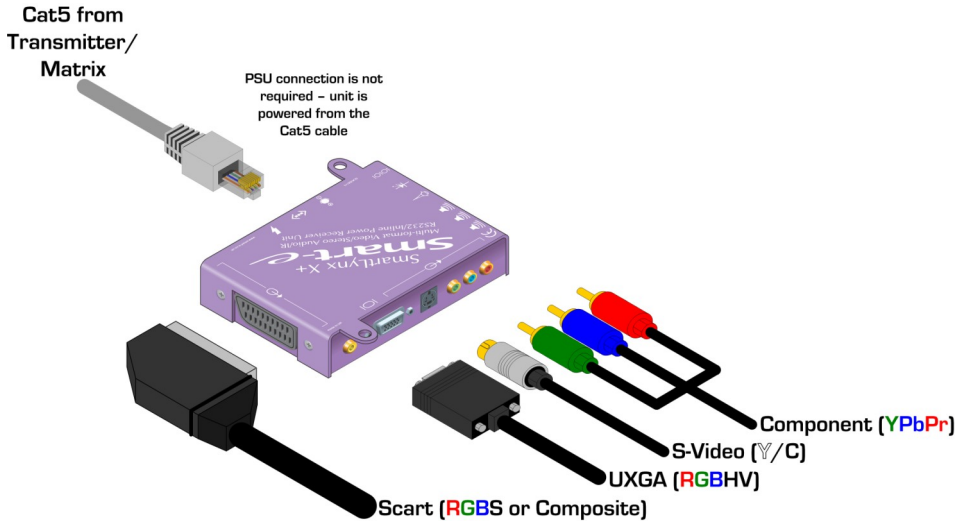
8. Connecting SLX-RX111 to audio and Infra-Red control

8.1   Connect the speakers or audio input on the display to the audio output on the receiver, using a 3.5mm jack plug.

8.2   If using the receiver to transmit Infra-Red signals back down the cable to the transmitter unit then connect an 'eye' to the jack position as shown in the diagram below.

8.3   If using the receiver to transmit Infra-Red signals up to the display from the transmitter unit then connect a 'LED' to the jack position as shown in the diagram below.

Please note: connecting the IR 'eye' will prevent the return RS232 path from the display

Cat5 from Transmitter/ Matrix
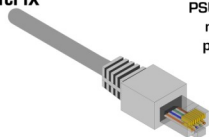
PSU connection is not required – unit is powered from the Cat5 cable

RS232
SM-LED (IR Emitter)
SM-EYE (IR Receiver)
Audio 1
Audio 2
Audio 3

SmartLynx X+
Multi-format Video/Stereo Audio/IR
RS232/Inline Power Receiver Unit
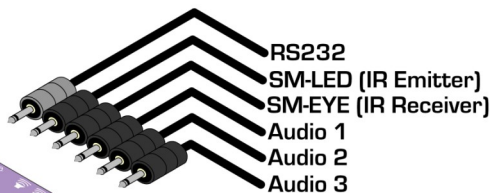
9. Mounting the Receiver

The receiver unit can compensate for cable losses over a length of 20-100m, and for mounting purposes the unit is provided with two 'mounting-hole' points for fixing to the wall or screen (See diagram below). Simply hold receiver in place, mark position of holes and set screws in these locations.

NB. Always use screws with heads larger than the holes.

'MOUNTING-HOLES'

SLX-RX111
Multi-format Video/Stereo Audio/IR/
RS232/Inline Power Receiver Unit

www.smart-e.co.uk

made in uk

'MOUNTING-HOLES'
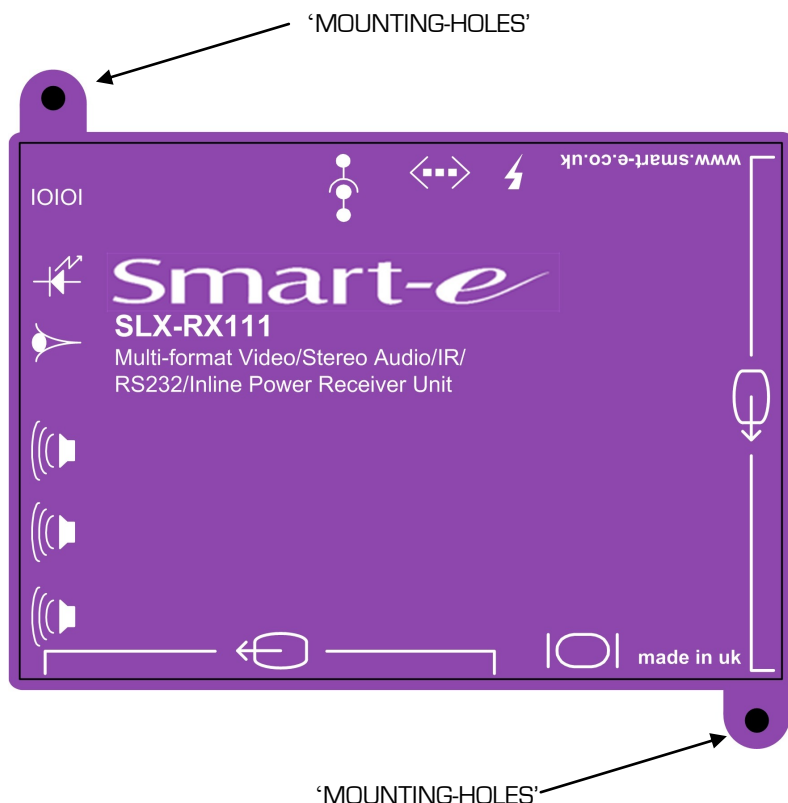
Technical Information

SLX-111

Video Input
Signal Type - Connector............. UXGA/RGBS/YUV/YPbPr/YC/CVBS - RJ45
Bandwidth.. 400MHz
Impedance....................................... 75 Ohm

Audio Input
Signal Type...................................... Stereo Audio
Bandwidth.. 20kHz, 0dB
Impedance....................................... 10k Ohm
Connector.. RJ45

Video Output
Signal Type - Connector............. UXGA-HD15 / RGBS / YUV-3xRCA / YC-4pin minidin / CVBS
Bandwidth.. 400MHz
Impedance....................................... 75 Ohm

Audio Output
Signal Type...................................... Stereo Audio
Bandwidth.. 20kHz, 0dB
Impedance....................................... 100 Ohm
Connector.. 3 x 3.5mm mini-jacks, Female

IR Input
Signal Type...................................... 30-500kHz modulated IR
Connector.. 3.5mm mini-jack, Female

IR Output
Signal Type...................................... 30-500kHz modulated IR
Connector.. RJ45

RS232/422 Input
Signal Type...................................... RS232 up to 115kbaud, full duplex tx, rx. RS422 9600baud
Connector.. RJ45

RS232/422 Output
Signal Type...................................... RS232 up to 115kbaud, full duplex tx, rx. RS422 9600baud
Connector.. 3.5mm mini-jack, Female

Power
Requirement - Connector........... 24VDC 500mA - 5mm x 2.1mm

Dimensions
Size... 120 x 94 x 23 mm TX & RX
Weight.. 0.2kg

Troubleshooting

No video?

1) Are the green LEDs on both the transmitter and receiver units? If not check that the 24V power supply (PSU) is connected and the LED on the PSU is lit. Check the cable compensation dials on the underside of the unit. Over compensation of the Red and Blue channels can cause the display to misinterpret the sync pulses and not display an image.
2) Is the video source a laptop or floating? (a floating source is one which has no earth reference i.e. uses a double insulated PSU or a figure 8 mains cable). If so make sure the PSU is an earthed unit when not using the PSU supplied.
3) Is the audio input level too high? The audio level should be set to line level (0dB or 700mV peak to peak) to prevent interference.

Display has problems syncing?

1) Is the audio input level too high? The audio level should be set to line level (0dB or 700mV peak to peak) to prevent interference.

Appendix

Limited Warranty Statement

A. Extent of limited warranty

1. Smart-e (UK) Ltd warrants to the end-user customers that Smart-e product specified above will be free from defects in materials and workmanship for the duration of 1 year, which duration begins on the date of purchase by the customer. Customer is responsible for maintaining proof of date of purchase.

2. Smart-e warranty covers only those defects which arise as a result of normal use of the product, and do not apply to any:

    a. Improper or inadequate maintenance or modifications

    b. Operations outside product specifications

    c. Mechanical abuse and exposure to severe conditions

3. If Smart-e receives during applicable warranty period notice of defect, Smart-e will at its discretion replace or repair defective product . If Smart-e is unable to replace or repair defective product covered by the Smart-e warranty within reasonable period of time Smart-e shall refund the cost of the product.

4. Smart-e shall have no obligation to repair, replace or refund unit until customer returns defective product to Smart-e.

5. Any replacement product could be new or like new, provided that it has functionality at least equal to that of the product being replaced.

6. Smart-e warranty is valid in any country where the covered product is distributed by Smart-e.

B. Limitations of warranty

TO THE EXTENT ALLOWED BY LOCAL LAW, NEITHER SMART-E NOT ITS THIRD PARTY SUPPLIERS MAKE ANY OTHER WARRANTY OR CONDITION OF ANY KIND WHETHER EXPRESSED OR IMPLIED , WITH RESPECT TO THE SMART-E PRODUCT , AND SPECIFICALLY DISCLAIM IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY , AND FITNESS FOR A PARTICULAR PURPOSE

C. Limitations of liability

To the extent allowed by local law the remedies provided in this warranty statement are the customers sole and exclusive remedies

TO THE EXTENT ALLOWED BY LOCAL LAW , EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT , IN NO EVENT WILL SMART-E OR ITS THIRD PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHETHER BASED ON CONTRACT , TORT OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

D. Local law

To the extent that this warranty statement is inconsistent with local law, this warranty statement shall be considered modified to be consistent with such law

Partial Product List

Product Range	Product Code	Description
SmartLynx - X	SLX-100 SLX-400	Transmitter and Receiver Pair Transmitter and Receiver Pair
SmartLynx-X +	SLX-111 SLX-211 SLX-212	Transmitter and Receiver Pair with RS232/IR Transmitter and Receiver Pair with RS232/IR Dual Transmitter and Receiver Pair with RS232/IR
SmartCast - X	SCX-TX600	One to Six Transmitter Unit
SmartCast-X+	SCX-TX550	One to Five Transmitter Unit with RS232/IR
SmartCast System	TUSC-1042 SCX-TX120E SCX-TX550E SLX-RX100ES	SmartCast Eurocard Rack (Up to 16 cards) Dual Screen Transmitter Eurocard One to Five Transmitter Eurocard with RS232/IR Eurocard Receiver for UGXA,YUV,Y/C, and Audio
SmartNet-X+ Matrix Switches	SNX-8x8+ SNX-16x16+	8 x 8 Distribution Matrix 16 x 16 Distribution Matrix (Up to 256 x 256)
SmartNet-X+ Matrix Bundles	SNX-8X8IRP SNX-8X8RSP	Complete Infrared Controlled 8X8 Matrix Package Complete RS232 Controlled 8X8 Matrix Package